

## CLAIMS

1. A nanocomposite comprising clay and an organic compound, in which the clay is a clay bridged with a metal compound.
- 5 2. A nanocomposite according to claim 1, in which the metal is iron and/or aluminum.
3. A nanocomposite according to claim 1, in which the clay of the nanocomposite is selected from montmorillonite, laponite, beidellite, nontronite, 10 saponite, saucomite, hectorite, stevensite, kaolinite, halloysite, vermiculite, and sepiolite, or one of their synthetic or naturally interstratified mixtures.
- 15 4. A nanocomposite according to claim 1, in which the clay of the nanocomposite is laponite or montmorillonite.
5. A nanocomposite according to claim 1, in which the organic compound is a polymer.
- 20 6. A nanocomposite according to claim 5, in which the polymer is selected from polyethylene, polypropylene, ethylene copolymers, non-halogenated elastomers, thermoplastic elastomers, silicones, or mixtures thereof.
- 25 7. A nanocomposite according to claim 5, in which the polymer is selected from polyester resins, epoxy resins, polyamides, polyimides, polyetherimides, polyamide imides, polyurethanes, or mixtures thereof.
- 30 8. A power cable comprising a nanocomposite according to claim 1 in its sheath.

9. A telecommunication cable comprising a nanocomposite according to claim 1 in its sheath.
10. A cable according to claim 8, in which the sheath is constituted by a nanocomposite.
- 5 11. A cable according to claim 8, provided with an outer coating that comprises a nanocomposite.
12. A process for producing a nanocomposite according to claim 1, comprising the steps of:
  - preparing a bridged clay; and
- 10 13. A process according to claim 12, in which preparation of the bridged clay comprises the steps of :
  - adding a mixture of an oligomeric solution of a metal compound to the clay in suspension;
  - eliminating the excess solution by centrifuging;
  - washing the residue;
  - drying; and
  - heat treatment.
- 15 20 14. A process according to claim 12, further comprising a step for treating the bridged clay with a compatibilizing compound prior to mixing with the organic compound.
- 25 15. A process according to claim 14, in which the compatibilizing compound is a quaternary ammonium salt.